

REMARKS

The present amendment is submitted in an earnest effort to advance this case to issue without delay.

1. Application Serial Number 10/607,489 has been expressly abandoned in a communication filed in that application concurrently herewith. A copy of that communication is enclosed. That Express Abandonment eliminates the double patenting rejection of the same invention type contained in paragraphs 13 and 14 of the Office Action.

2. A specification amendment has been provided to eliminate the informalities mentioned at page 5 line 27 and a number of others which have been detected upon review of the specification. No new matter has been introduced. The trademarks have been at least initially capitalized wherever they appear and are accompanied by generic terminology.

3. The claims have been amended as well to eliminate all of the grounds for objection contained in the detailed action, paragraphs 3 and 4. Applicant appreciates the Examiners's suggestions of specific corrections.

4. The claim amendment likewise removes all grounds of rejection under 35 USC 112, second paragraph. For example, appropriate Markush terminology has been used in claims 2, 9, and 12 (see paragraphs 5 -7 of the detailed action).

5. The amendment to the claims has likewise eliminated the anticipation rejection contained in paragraph 9 on pages 3 and 4 of the Office Action. Independent claims 1 and 10 expressly state that the warp and weft yarns which form the cross overs traverse the metal disks and orient these disks so that edges thereof are presented to flanks of a projectile penetrating into the layer and destroying, e.g. by shredding the projectile. In CHEDIAK et al Patent 5,824,940, cited by Applicant and relied upon as the principal reference by the Examiner, the disks, if disks of metal there are, are oriented perpendicular to the incoming round. This may be seen in FIG 1 in CHEDIAK et al as well as in FIG. 3 where the disks 18 are all perpendicular to the incoming round. There is not a word in CHEDIAK et al Patent 5,824,940, to suggest that edges of the CHEDIAK et al disks are presented to flanks of the incoming projectile. Furthermore, it is the intention of CHEDIAK et al, as can be seen from FIG. 3, that the disks 18 all be perpendicular to the incoming round. Furthermore, it is the invention of CHEDIAK et al that the disks intercept the projectile head on and to absorb energy of the projectile by shattering. Note column 6, lines 12 to 14, " the projectile was completely destroyed. The parts into which it broke, and the ceramic parts it

shattered, penetrated through the third layer 14" and through the first three sheets of layer 14"", but not beyond."

In two respects at least therefore, claims 1 and 10, two of the independent claims in the case, distinguish over CHEDIAK et al, namely, the orientation of the edges of the disks which meet the flanks of the projectile to shred it, and with respect to the use of disks which are resistant to disintegration upon impact with a projectile.

The reference to metal backing at column 4, lines 13 ff in CHEDIAK et al is not an indication that the member 18 is not to shatter but rather, a suggestion that a metal is advantageous to hold the ceramic together before it shatters. Claim 18, the only other independent claim in the case, expressly states that the beads have edges positioned to engage flanks of an incoming projectile to distinguish that claim from the CHEDIAK et al orientation which presents the disks perpendicular to the oncoming projectile.

The rejection of claims 1, 10 and 18 on CHEDIAK et al 35 USC 102 must fail and that applies to the remaining claims which depend from these independent claims.

6. The claims amended are allowable over CHEDIAK et al as applied alone under 35 USC 103 as well. The Examiner cannot fail to see the difference between the principle of the present invention, which does not provide an armor element perpendicular to the projectile path in the sense of all of the prior art

references, but rather allows the tip of the projectile to pass between the metal disks so that the edges of these disks can engage the flanks of the projectile and shred it. Where the projectile rotates as is the common case, due to rifling in the barrel from which the projectile is fired, the edges of the disks shred the projectile not only by peeling it apart but by a lathe-like turning action as well. In the art cited by the Examiner CHEDIAK et al presents a barrier perpendicular to the projectile which shatters by the kinetic energy of the projectile whereas the claimed invention cuts the projectile apart. In the secondary art, a chain mail approach is taken using, for example, interlocking rings of metal wire (see GRANQVIST, HONKALA and ZIEGLER). In none of these references is anything which can be turned edge on to engage the flanks of a projectile and shred it. Furthermore, in the chain-mail approach of the art the rings have round cross sections and can present no "edge" to an incoming round.

Thus there is nothing that these references can suggest by way of obvious modification of CHEDIAK et al to provide disks which have edges presented to the projectile flanks as claimed by virtue of the way in which the crossing warp and weft yarns hold the disks. (See page 4, lines 1 and 2 of the instant specification.)

The dependent claims do in part recite structure which derives from the prior art in the sense that the ballistic fabric with which the invention uses is per se known. However, in the

context of the respective independent claims, the dependent features are enhancements and thus the dependent claims are properly retained in the case.

Claims 1 - 19 are thus deemed to be allowable and an early notice to that effect is earnestly solicited.

Respectfully submitted,  
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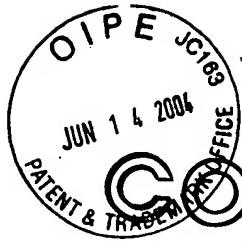
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IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor Robert L. MULLER, Jr.

Patent App. 10/607,489

Filed 26 June 2003

Conf. No. 4448

For BODY ARMOR

Art Unit 3644

Examiner Zerr, J

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DECLARATION OF EXPRESS ABANDONMENT UNDER 35 USC 1.138

Pursuant to 37 CFR 1.138, the undersigned attorney for the Applicant hereby abandons the above-identified application.

Respectfully submitted,  
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